

**REMARKS**

Claims 1-30 are currently pending in the subject application, and are presently under consideration. Claims 1-4, 6, 9-11, 14-17, 20-24, 27, 29, and 30 are rejected. Claims 5, 7, 8, 12, 13, 18, 19, 25, 26, and 28 have been indicated as containing allowable subject matter. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

**I. Interview Summary**

Applicant's representative appreciates the courtesy extended during the telephone interview on October 24, 2005. During the interview a general agreement was reached regarding some differences between U.S. Patent No. 5,574,455 to Hori, et al. and what is being recited in claim 1. Specifically, claim 1 recites that "a digital-to-analog converter that receives a delta-sigma modulated signal associated with the selected one of the plurality of frequency patterns," whereas Hori discloses that a signal selector (12) selects one of a pair of signals from output devices (10 or 11) based on the output from a delta-sigma modulator (100). The following response has been drafted in view of the foregoing differences and understanding reached during the telephone interview.

**II. Rejection of Claims 1-4, 6, 20-23, 27, 29, and 30 Under 35 U.S.C. §103(a)**

Claims 1-4, 6, 20-23, 27, 29, and 30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,574,455 to Hori, et al. ("Hori") in view of U.S. Patent No. 6,249,229 to Eckstein, et al. ("Eckstein"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

The Office Action dated July 27, 2005 (at page 2) asserts that the Hori teaches a digital to analog converter that includes a delta sigma modulator. In contrast to what is recited in claim 1, however, Hori teaches that a digital-to-analog converter (FIG. 1, col. 7, ll. 65-67) includes a delta-sigma modulator 100. Moreover, the delta-sigma modulator taught by Hori is used by a signal selector 12 to select between the first and second output device signals for digital-to-analog conversion (FIG. 1, col. 8, lines 13-28). For example, if the output of the delta-sigma

modulator is a "0", the signal selector selects the first signal output from the first signal output device, and if the output of the delta-sigma modulator is a "1", the signal selector selects the second signal output from the second signal output device (col. 8, ll. 28-32). Hori thus teaches that it is the signals generated by the first and second output devices that are digital-to-analog converted, and not delta-sigma modulated signal, as recited in claim 1.

The Office Action dated July 27, 2005, further relies on Eckstein to teach a digitally controlled frequency synthesizer where a controller accepts a group address selector for determining the specific frequency pattern to be employed (page 2, citing Eckstein, col. 5, ll. 12-15). However, the addition of Eckstein does not cure the deficiencies of Hori to teach or suggest a digital-to-analog converter that receives a delta-sigma modulated signal associated with the selected one of the plurality of frequency patterns and converts the delta-sigma modulated signal to a corresponding analog signal, as recited in claim 1. For instance, if the time/frequency pattern of Eckstein were incorporated in to the system of Hori, as suggested in the Office Action, applicant submits that such a combination would require that the delta sigma modulator of Hori be eliminated since Hori teaches that the delta sigma modulator is used to select one of two output signals.

Additionally applicant submits that the Office Action has not provided sufficient evidence of motivation to make the proffered combination. The Office Action seeks to employ Eckstein's group address selector 36, which is used for determining a specific time/frequency pattern to be employed by the controller 12 (Eckstein at col. 5, lines 12-15). However, Eckstein teaches that the group address selector 36 is a piece of external hardware for each electronic article security (EAS) system that is used to select distinct time/frequency patterns for co-located EAS systems to mitigate false alarms (Eckstein, at col. 2, lines 41-51). Eckstein further teaches that each EAS system 10 includes "a set of switches (not shown) mounted on each EAS system 10 (see Eckstein at Col. 7, lines 41-53)." For example, why would one of ordinary skill in the art employ a group address selector, which Eckstein teaches is used to prevent interference between EAS systems 10, in a digital-to-analog converter, as taught by Hori?

Withdrawal of the rejection of claim 1, as well as claims 2-4, 6, and 9-11 which depend therefrom, is respectfully requested.

Claim 21 recites a means for converting a delta-sigma modulated signal to a corresponding analog signal. For the reasons stated above regarding claim 1, claim 21 should be allowed over the cited art. Additionally, in sharp contrast to both Hori and to Eckstein, claim 21 recites that the frequency selection signal (based on which a digital representation of one of a plurality of frequency patters is provided) varies according to a hop rate. Withdrawal of the rejection of claim 21, as well as claims 22-24 which depend therefrom, is respectfully requested.

Claim 27 recites providing a delta-sigma modulated signal associated with the selected one of the plurality of frequencies and converting the delta-sigma modulated signal to a corresponding analog signal. For similar reasons to those stated above regarding claim 1, claim 27 should be allowed over the cited art. Withdrawal of the rejection of claim 27, as well as claims 29-30 which depend therefrom, is respectfully requested.

For the reasons described above, claims 1-4, 6, 20-23, 27, 29, and 30 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

### **III. Rejection of Claims 9-11, 14-17, 21, and 24 Under 35 U.S.C. §103(a)**

Claims 9-11, 14-17, 21, and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hori in view of Eckstein and in further view of U.S. Patent No. 6,748,025 to Hickling ("Hickling"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 9 recites that the digital-to-analog converter provides the analog signal as a frequency hopping signal that hops between selected ones of the plurality of frequency patterns at a hop rate based on the selection input. The Office Action dated July 27, 2005, asserts that the elements recited in claim 9 are taught by Hickling by stating that Hickling discloses a digital-to-analog converter that is applicable for use in frequency hopping modulation techniques (page 4, citing Hickling, FIG. 4 and col. 1, ll. 19-23). Representative for Applicant respectfully disagrees with this assertion. Hickling teaches a digital-to-analog converter within a delta-sigma

modulator (FIG. 4, reference number 86). However, the digital-to-analog converter taught by Hickling is fed-back to an inverting input of a loop amplifier to produce one of two analog levels that depend on its input for comparison at the loop amplifier for purposes of generating the delta-sigma output (col. 7, ll. 60-65). Hickling fails to teach or suggest that an analog signal corresponds to a frequency hopping signal that hops between the selected ones of the frequency patterns at a hop rate, as recited in claim 9. The discussion of frequency hopping in Hickling pertains to a general indication that frequency hopping is used in modern communications systems in the Discussion of the Related Art section (col. 1, ll. 19-23). Neither Hickling, alone nor in combination with Hori and Eckstein, provides a nexus between frequency hopping techniques and the use of a digital-to-analog converter in a delta-sigma modulator, such that it would render obvious the synthesizer recited in claim 9. Since the combination of Hori, Eckstein, and Hickling fails to teach or suggest claim 9, withdrawal of the rejection of claim 9, as well as claim 10 which depends therefrom, is respectfully requested.

Claim 14 has been amended to correct a typographical error and recites a digital-to-analog converter that receives a delta-sigma modulated signal associated with the selected one of the plurality of frequency patterns and converts a delta-sigma modulated signal to a corresponding analog signal. For similar reasons to those discussed above regarding claims 1 and 9, claim 14 should be allowed over the cited art. The addition of Hickling does not cure the deficiencies of Hori and Eckstein to teach or suggest the above recited element in claim 14. Withdrawal of the rejection of claim 14, as well as claims 15-17 which depend therefrom, is respectfully requested.

Claim 21 recites a means for converting a delta-sigma modulated signal to a corresponding analog signal. For the reasons stated above regarding claims 1 and 9, claim 21 should be allowed over the cited art. The addition of Hickling does not cure the deficiencies of Hori and Eckstein to teach or suggest the above recited element in claim 21. Withdrawal of the rejection of claim 21, as well as claims 22-24 which depend therefrom, is respectfully requested

For the reasons described above, claims 9-11, 14-17, 21, and 24 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

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**IV. CONCLUSION**

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

If the Examiner has any questions or if the Applicant or its representative can be of any assistance in connection with prosecution of this application, the Examiner is invited and encouraged to contact the undersigned at the number identified below.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,



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